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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/448,508	11/24/1999	CONAL P. WALSH	10263STUS01U NORT10-00099	5123

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EXAMINER	
ARMSTRONG, ANGELA A	
ART UNIT	**PAPER NUMBER**
2654	18

DATE MAILED: 01/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

JS

Office Action Summary	Application No.	Applicant(s)	
	09/448,508	WALSH, CONAL P.	
	Examiner	Art Unit	
	Angela A. Armstrong	2654	

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 August 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10 and 12-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10 and 12-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Continued Prosecution Application

1. The request filed on October 3, 2002 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No. 09/448508 is acceptable and a CPA has been established. An action on the CPA follows.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 5, 18-19, 24-25 and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Kosaka et al (US Patent No. 5,220,629), hereinafter referred to as Kosaka. Kosaka discloses a speech synthesis apparatus and method.

Regarding claim 1, Kosaka discloses determining a number of morae representing a syllable count in the sentence or word at col. 8, lines 42-45, which reads on "counting syllables in each word of said text segment". Additionally, at col. 12, lines 55-64 Kosaka discloses a parameter expansion/reduction rate setting means and col. 13, lines 1-10 discloses that parameters are expanded/reduced, and connected to coincide with a syllable beat point pitch set by a syllable beat point pitch setting means, which reads on "assigning a playing rate indicator to said each word of said text segment based on a total number of syllables in said word."

Regarding claim 2, Kosaka discloses everything as claimed in claim 1. Additionally, Kosaka discloses expansion/reduction of speech segments for speech synthesis at col. 8, line 63 continuing to col. 10, line 62.

Regarding claim 3, Kosaka discloses everything as claimed in claim 2. Additionally, Kosaka discloses that the period lengths of speech segments are changed in accordance with a change in morea (col. 9, lines 39-40).

Regarding claim 5, Kosaka teaches changing the utterance speed of the based on threshold criteria at col. 9, line 34 – col. 10, line 16.

Regarding claim 18, Kosaka discloses implementation of the program in a central processing unit at col. 6, lines 50-51, which reads on "processor" and "persistent storage memory in communication with said processor, storing processor readable instructions". Additionally, Kosaka discloses text input means at col. 5, line 64. Kosaka discloses determining a number of morae representing a syllable count in the sentence or word at col. 8, lines 42-45, which reads on "counting syllables in each word of said text segment". Additionally, at col. 12, lines 55-64 Kosaka discloses a parameter expansion/reduction rate setting means and col. 13, lines 1-10 discloses that parameters are expanded/reduced, and connected to coincide with a syllable beat point pitch set by a syllable beat point pitch setting means, which reads on "assigning a playing rate indicator to said each word of said text segment based on a total number of syllables in said word."

Regarding claim 19, Kosaka discloses everything as claimed in claim 18. Additionally, Kosaka discloses expansion/reduction of speech segments for speech synthesis at col. 8, line 63 continuing to col. 10, line 62.

Regarding claim 30, Kosaka discloses everything as claimed in claim 18. Additionally, Kosaka discloses that the period lengths of speech segments are changed in accordance with a change in morea (col. 9, lines 39-40).

Regarding claim 24, Kosaka discloses implementation of the program in a central processing unit at col. 6, lines 50-51, which reads on "a computer readable medium storing computer software". Additionally, Kosaka discloses text input means at col. 5, line 64. Kosaka discloses determining a number of morae representing a syllable count in the sentence or word at col. 8, lines 42-45, which reads on "counting syllables in each word of said text segment". Additionally, at col. 12, lines 55-64 Kosaka discloses a parameter expansion/reduction rate setting means and col. 13, lines 1-10 discloses that parameters are expanded/reduced, and connected to coincide with a syllable beat point pitch set by a syllable beat point pitch setting means, which reads on "assigning a playing rate indicator to said each word of said text segment based on a total number of syllables in said word."

Regarding claim 25, Kosaka discloses everything as claimed in claim 24. Additionally, Kosaka discloses expansion/reduction of speech segments for speech synthesis at col. 8, line 63 continuing to col. 10, line 62.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kosaka in view of Hutchins (US Patent No. 5,384,893).

Regarding claim 4, Kosaka teaches everything as claimed in claim 3. Kosaka does not specifically teach decreasing the duration of pauses associated with selected punctuation in a text segment. However, it is well known to modify output duration of text-to-speech synthetic speech to reflect various punctuation in the text of interest.

In a similar field of endeavor, Hutchins discloses a method and apparatus for speech synthesis based on prosodic analysis. Specifically, at col. 7, lines 44-56, Hutchins teaches implementation of a prosody generator, which "adjusts duration before and stress following punctuation."

Therefore, it would have been obvious to one of ordinary skill at the time of invention to modify the speech synthesis system of Kosaka to implement modifying the duration of pauses associated with punctuation in a text segment, as taught by Hutchins, for the purpose of making the synthetic speech sound more like conversational speech and hence sound more natural.

4. Claims 6-7, 20-21 and 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oikawa et al (US Patent No. 5,396,577), hereinafter referred to as Oikawa, in view of Church (US Patent No. 5,146,405).

Oikawa discloses a speech synthesis apparatus for rapid speed reading.

Regarding claims 6, 20, and 26Oikawa et al teaches receiving input text and performing text analysis at Figure 2, sub-block 2; col. 3, lines 13-50, which reads on "performing analysis of said text segment."

Assigning playback rates to segments based on categorizations of a determined degree of importance for the text at col. 3, line 37 – col. 5, line 4, which reads on "assigning a playing rate indicator to each word of said text segment."

Oikawa does not specify that the text analysis and categorizations of the determined degree of importance be based on grammatical analysis. However, implementation of grammatical analysis for speech synthesis was well known in the art.

In a similar field of endeavor, Church teaches a method for part-of-speech determination and usage which implements grammatical analysis of text and identifies parts of speech (including nouns) of the text (Abstract), and suggests that speech synthesis needs parts-of-speech analysis of input text to produce a result that sounds like human speech (col. 1, lines 14-24

Therefore, it would have been obvious to one of ordinary skill at the time of invention to perform grammatical analysis of text to identify parts of speech of the text, as taught by Church, to implement parts of speech as the categories of degrees of importance in the speech synthesis system of Oikawa, for the purpose of producing synthetic speech that sounds more like human speech, as taught by Church.

Regarding claims 7, 21, and 27, Oikawa and Church teach everything as claimed in claims 6, 20, and 26. Additionally, Oikawa teaches generating synthetic speech based on the assigned playback rates and allows for the omission of speech for segments in which an indication of a slow playing rate was identified at col. 5, lines 28-37.

5. Claims 8-10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oikawa in view of Church as applied to claim 7 above, and further in view of Hutchins (US Patent No. 5,384,893).

Regarding claim 8, Oikawa and Church teach everything as claimed in claim 7. Oikawa and Church do not specifically teach decreasing the duration of pauses associated with selected punctuation in a text segment. However, it is well known to modify output duration of text-to-speech synthetic speech to reflect various punctuation in the text of interest.

In a similar field of endeavor, Hutchins discloses a method and apparatus for speech synthesis based on prosodic analysis. Specifically, at col. 7, lines 44-56, Hutchins teaches implementation of a prosody generator, which "adjusts duration before and stress following punctuation."

Therefore, it would have been obvious to one of ordinary skill at the time of invention to modify the speech synthesis system of Oikawa to implement modifying the duration of pauses associated with punctuation in a text segment, as taught by Hutchins, for the purpose of making the synthetic speech sound more like conversational speech and hence sound more natural.

Regarding claim 9, Oikawa, Church and Hutchins teach everything as claimed in claim 8. Oikawa does not specifically disclose identifying parts of speech of the analyzed text. However, implementation of identification of parts of speech for text for implementation in text-to-speech synthesis was well known in the art.

In a similar field of endeavor, Church teaches a method for part-of-speech determination and usage which implements grammatical analysis of text and identifies parts of speech

(including nouns) of the text (Abstract), and suggests that speech synthesis needs parts-of-speech analysis of input text to produce a result that sounds like human speech (col. 1, lines 14-24

Therefore, it would have been obvious to one of ordinary skill at the time of invention to perform grammatical analysis of text to identify parts of speech of the text, as taught by Church, to implement parts of speech as the categories of degrees of importance in the speech synthesis system of Oikawa, for the purpose of producing synthetic speech that sounds more like human speech, as taught by Church.

Regarding claim 10, Oikawa, Church and Hutchins teach everything as claimed in claim 9. Additionally, Additionally, Oikawa teaches generating synthetic speech based on the assigned playback rates and allows for the omission of speech for segments in which an indication of a slow playing rate was identified at col. 5, lines 28-37.

Regarding claim 12, Oikawa, Church and Hutchins teach everything as claimed in claim 10. Additionally, Additionally, Oikawa teaches generating synthetic speech based on the assigned playback rates and allows for the omission of speech for segments in which an indication of a slow playing rate was identified at col. 5, lines 28-37.

6. Claims 13-14, 22-23 and 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oikawa in view of Richard et al (US Patent No. 5,924,068), hereinafter referred to as Richard.

Oikawa discloses a speech synthesis apparatus for rapid speed reading.

Regarding claims 13, 22, and 28, Oikawa et al teaches receiving input text and performing text analysis at Figure 2, sub-block 2; col. 3, lines 13-50, which reads on "performing analysis of said text segment."

Assigning playback rates to segments based on categorizations of a determined degree of importance for the text at col. 3, line 37 – col. 5, line 4, which reads on "assigning a playing rate indicator to each word of said text segment."

Oikawa et al do not specify that the categorizations of the determined degree of importance be based on an inventory of pre-selected words. However, implementation of storing a user desired inventory of keywords was well known in the art.

In a similar field of endeavor, Richard teaches a system that uses text-to-speech synthesis to provide audio output of user selected text which implements a dictionary to provide syntactic and semantic prosody and allows users to provide keywords which are used to determine what information is to be selected for synthesis. Users are able to determine which information is read and vary the rate at which the information is read (Abstract).

Therefore, it would have been obvious to one of ordinary skill at the time of invention to implement pre-selected words as the categories of degrees of importance in the speech synthesis system of Oikawa, for the purpose of allowing system users to determine what text is synthesized and vary the rate at which the synthetic speech is produced, as suggested by Richard.

Regarding claims 14, 23, and 29, Oikawa and Richard teach everything as claimed in claims 13, 22, and 28. Additionally, Oikawa teaches generating synthetic speech based on the assigned playback rates and allows for the omission of speech for segments in which an indication of a slow playing rate was identified at col. 5, lines 28-37.

7. Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oikawa in view of Richard as applied to claim 14 above, and further in view of Hutchins (US Patent No. 5,384,893).

Regarding claim 15, Oikawa and Richard teach everything as claimed in claim 7. Oikawa and Church do not specifically teach decreasing the duration of pauses associated with selected punctuation in a text segment. However, it is well known to modify output duration of text-to-speech synthetic speech to reflect various punctuation in the text of interest.

In a similar field of endeavor, Hutchins discloses a method and apparatus for speech synthesis based on prosodic analysis. Specifically, at col. 7, lines 44-56, Hutchins teaches implementation of a prosody generator, which "adjusts duration before and stress following punctuation."

Therefore, it would have been obvious to one of ordinary skill at the time of invention to modify the speech synthesis system of Oikawa to implement modifying the duration of pauses associated with punctuation in a text segment, as taught by Hutchins, for the purpose of making the synthetic speech sound more like conversational speech and hence sound more natural.

Regarding claim 16, Oikawa, Richard and Hutchins teach everything as claimed in claim 15. Additionally, Additionally, Oikawa teaches generating synthetic speech based on the assigned playback rates and allows for the omission of speech for segments in which an indication of a slow playing rate was identified at col. 5, lines 28-37.

Regarding claim 17, Oikawa, Richard and Hutchins teach everything as claimed in claim 16. Additionally, Additionally, Oikawa teaches generating synthetic speech based on the

assigned playback rates and allows for the omission of speech for segments in which an indication of a slow playing rate was identified at col. 5, lines 28-37.

Response to Arguments

8. Applicant's arguments filed August 25, 2003 have been fully considered but they are not persuasive.

Regarding claims 1-2, 18-19, and 24-25, Applicant argues that Kosaka does not appear to disclose assigning a value to a variable based on a total number of syllables in a word. The Examiner disagrees and argues that Kosaka et al discloses determining a number of morae representing a syllable count in the sentence or word at col. 8, lines 42-45. The Examiner argues that if the number of morae represents a syllable count that is determined for a sentence, and the sentence is comprised of words, then the syllables of each word of a text segment is counted, and thus Kosaka provides adequate support for a total number of syllables in a word.

Regarding claims 6, 20, and 26, applicant argues Oikawa does not appear to disclose, teach or suggest assigning an importance degree value to each word in a test segment. Applicant is referred to Oikawa col. 3, lines 30-34, in which Oikawa teaches assigning degree of importance based on content of the text and to Church col. 10, lines 8-63, in which Church specifically describes the importance of parts of speech in speech synthesis and indicates that "pronunciation sometimes depends on part of speech" (col. 10, lines 15-16). Further, Church specifically describes the categorization or degree of importance for each word of the phrase "I see a bird" (col. 6, lines 9-30).

Regarding claims 13, 22, and 28, in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angela A. Armstrong whose telephone number is 703-308-6258. The examiner can normally be reached on Monday-Thursday 7:30-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (703) 305-9645. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-0377.

Angela A. Armstrong
Examiner
Art Unit 2654

AAA
December 27, 2003

Vijay Chawan 12/28/03

VIJAY CHAWAN
PRIMARY EXAMINER